

REMARKS

The present application was filed on July 19, 2004 with claims 1-18. Claims 1, 9, 17 and 18 are the independent claims.

In the outstanding Office Action, the Examiner: (i) rejected claims 1-3, 5, 8-11, 13 and 16-18 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 6,092,059 to Straforini et al. (hereinafter "Straforini") in view of U.S. Patent No. 6,513,027 to Powers et al. (hereinafter "Powers"); (ii) rejected claims 4, 7, 12 and 15 under 35 U.S.C. §103(a) as being unpatentable over Straforini in view of Powers in further view of U.S. Patent No. 6,389,436 to Chakrabarti et al. (hereinafter "Chakrabarti"); and (iii) indicated allowable subject matter in claims 6 and 14.

Applicants appreciate the acknowledgment of allowable subject matter in claims 6 and 14.

In this response, Applicants amend the specification, and traverse the §103(a) rejections of claims 1-5, 7-13 and 15-18, for at least the following reasons.

As is well-established law, an obviousness rejection under §103(a) requires that the cited references must "teach or suggest all the claim limitations," and that there be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine reference teachings. See Manual of Patent Examining Procedure (MPEP), Eighth Edition, August 2001, §706.02(j).

Regarding the rejection of claims 1-3, 5, 8-11, 13 and 16-18, Applicants submit that the Straforini/Powers combination fails to teach or suggest all the claim limitations that the Office Action asserts it does, and that there is no cogent suggestion or motivation for combining the reference teachings, as asserted by the Office Action, to reach the claimed invention.

The present invention, for example, as recited in independent claim 1, relates to a method for use in resource discovery of establishing a semantic correspondence between a first set of labels and a second set of labels. The method comprises the following steps. One or more examples and a classifier for the first set of labels, and one or more examples and a classifier for the second set of labels are obtained. The classifier associated with the first set, trained on examples from the first set, is used to classify the second set thereby generating classification results for the second set of labels, and the classifier associated with the second set, trained on examples from the second set, is

used to classify the first set thereby generating classification results for the first set of labels. Label association rules are generated based on the classification results for the first set of labels and the classification results for the second set of labels. A label association rule has a semantic correspondence measure of confidence associated therewith. Independent claims 9, 17 and 18 recite similar limitations.

By way of an illustrative example, the Summary section of the present specification states at page 4, line 18, through page 5, line 2:

In an illustrative aspect of the invention, a method of evaluating semantic similarity between entities stored in a repository and entities being requested in a query comprises determining similarity between each class defined in the query and each class defined in the repository. The question to be answered is: how well does class A from the query correspond to class X in the repository? This is accomplished by providing the training set from the query as input to the trained repository classifier, and providing the training set from the repository as input to the trained query classifier. The two sets of output labels, with associated scores, are input to a module (such as, for example, a fuzzy logic inference engine) which reconciles the two sets, and outputs a ranking score for each query class/repository class combination. The symmetric classification operations are referred to herein as cross-classification.

Straforini discloses an automatic classifier for real time inspection and classification. As explained at column 3, lines 47-64, of Straforini:

The system includes a first rule-based classifier that provides rules that embody requirements of selected features so as to together define selected classes. These rules are applied to measured features of an article characteristic to assign one of the selected classes to that characteristic, should the article characteristic meet the feature requirements of one of the selected classes. The system also includes a trainable classifier configured based on a training set of preclassified characteristics, with the trainable classifier connected so as to accept from the first rule-based classifier an article characteristic not classified by the rule based classifier. The trainable classifier assigns one of the training set classes to the unclassified characteristic, should the trainable classifier configuration associate that characteristic with one of the training set classes.

Powers discloses automated category discovery techniques for a terminological knowledge base. As explained at column 12, lines 24-67, of Powers:

FIG. 4 illustrates an example portion of a knowledge base including cross references and links among categories and terms. The classification hierarchy and notations shown in FIG. 4 illustrate an example that classifies a document on travel or tourism, and more specifically on traveling to France and visiting museums and places of interest. As shown in FIG. 4, the classification categories (e.g., knowledge catalog 560) contains two independent static ontologies, one ontology for "geography", and a second ontology for "leisure and recreation." The "geography" ontology includes categories for "political geography", "Europe", "Western Europe", and "France." The categories "arts and entertainment" and "tourism" are arranged under the high level category "leisure and recreation." The "visual arts" and the "art galleries and museums" are subcategories under the "arts and entertainment" category, and the category "places of interest" is a subcategory under the category "tourism."

The knowledge base 155 is augmented to include liking and cross referencing among categories for which a linguistic, semantic, or usage association has been identified. For the example illustrated in FIG. 4, the categories "France", "art galleries and museums", and "places of interest" are cross referenced and/or linked as indicated by the circles, which encompass the category names, as well as the lines and arrows. This linking and/or cross referencing indicates that the categories "art galleries and museums" and "places of interest" may appear in the context of "France."

However, assuming arguendo that Straforini and Powers are combinable, the combination fails to teach or suggest all of the claim limitations of independent claims 1, 9, 17 and 18.

For example, the combination does not teach or suggest "using the classifier associated with the first set, trained on examples from the first set, to classify the second set thereby generating classification results for the second set of labels, and using the classifier associated with the second set, trained on examples from the second set, to classify the first set thereby generating classification results for the first set of labels," as in the claimed invention.

The Office Action contends that Powers discloses such feature and cites the above-quoted portions of Powers as support. However, it is clear that the techniques disclosed in Powers merely cross-reference categories within the knowledge base using category splitting and clustering operations (e.g., morphological processing 140 in FIG. 1). This is clearly not the same as "using the

classifier associated with the first set, trained on examples from the first set, to classify the second set thereby generating classification results for the second set of labels, and using the classifier associated with the second set, trained on examples from the second set, to classify the first set thereby generating classification results for the first set of labels,” as in the claimed invention. In fact, it does not appear that Powers employs classifiers at all.

Further, while Straforini discloses two classifiers in the form of a rule-based classifier and a trainable classifier, it is clear in the above-quoted portion of Straforini that the trainable classifier is connected to the rule-based classifier so as to accept from the rule-based classifier an article characteristic not classified by the rule based classifier. This is not the same as “using the classifier associated with the first set, trained on examples from the first set, to classify the second set thereby generating classification results for the second set of labels, and using the classifier associated with the second set, trained on examples from the second set, to classify the first set thereby generating classification results for the first set of labels,” as in the claimed invention.

Still further, the Straforini/Powers combination also does not teach or suggest “generating label association rules based on the classification results for the first set of labels and the classification results for the second set of labels, a label association rule having a semantic correspondence measure of confidence associated therewith,” as in the claimed invention.

The Office Action contends that Straforini discloses such feature and cites the above-quoted portions of Straforini as support. However, it is unclear where Straforini mentions anything about “a label association rule having a semantic correspondence measure of confidence associated therewith,” as in the claimed invention. Powers is also silent with respect to this feature.

For at least the above reasons, Applicants assert that independent claims 1, 9, 17 and 18, and the claims that depend therefrom, are patentable over the Straforini/Powers combination.

Furthermore, Appellants assert that the Straforini/Powers combination are improper. The Federal Circuit has stated that when patentability turns on the question of obviousness, the obviousness determination “must be based on objective evidence of record” and that “this precedent has been reinforced in myriad decisions, and cannot be dispensed with.” In re Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002). Moreover, the Federal Circuit has stated that “conclusory statements” by an

examiner fail to adequately address the factual question of motivation, which is material to patentability and cannot be resolved “on subjective belief and unknown authority.” Id. at 1343-1344.

In the Office Action at pages 3 and 4, the Examiner attempts to demonstrate motivation to combine by making reference to various portions of Straforini and stating that “inspection for minimum manufacturing quality criteria is typically preferably based on classification of aspects of articles, e.g., defects of articles” and that “defects are then typically classified into categories”

However, Applicants submit that these statements are based on the type of “subjective belief and unknown authority” that the Federal Circuit has indicated provides insufficient support for an obviousness rejection. More specifically, the Examiner merely cites passages from Straforini but fails to identify any objective evidence of record which supports the proposed combination with Powers. That is, other than the cited passages from Straforini, there is no objective support given for why one would combine Straforini specifically with Powers, nor is there any objective support given for how one would combine Straforini specifically with Powers to attain the claimed invention.

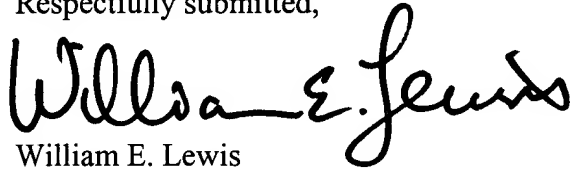
For at least the above reasons, Applicants assert that independent claims 1, 9, 17 and 18, and the claims that depend therefrom, are patentable over the Straforini/Powers combination.

Regarding the rejection of claims 4, 7, 12 and 15, Applicants submit that the Straforini/Powers/Chakrabarti combination is improper based on 35 U.S.C. §103(c). That is, 35 U.S.C. §103(c) states that “[s]ubject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.” Such is the case with respect to the present application and Chakrabarti, based on filing dates and a common assignee.

Applicants also assert that the claims that depend from independent claim 1 and 9 are patentable, not only for the reasons given above, but also because such claims recite patentable subject matter in their own right.

In view of the above, Applicants believe that claims 1-18 are in condition for allowance, and respectfully request withdrawal of the various §103(a) rejections.

Respectfully submitted,

A handwritten signature in black ink, reading "William E. Lewis". The signature is written in a cursive, flowing style with a large, prominent "W" and "L".

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William E. Lewis
Attorney for Applicant(s)
Reg. No. 39,274
Ryan, Mason & Lewis, LLP
90 Forest Avenue
Locust Valley, NY 11560
(516) 759-2946